



Key Terms

- Coal Bed
- Fossil Fuel
- Industry
- Mercaptan
- Methane
- Natural Gas
- Nonrenewable
- Residences

Natural Gas Facts

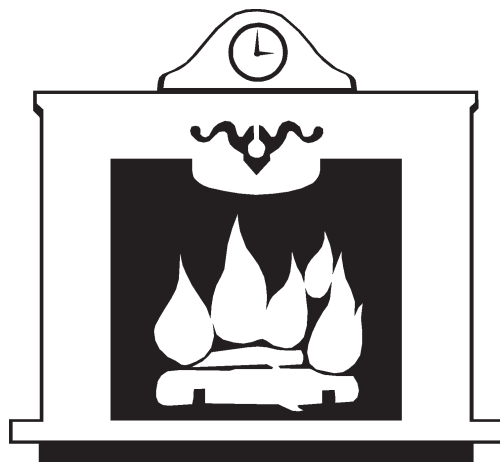
- The United States is the second largest producer and the largest consumer of natural gas.
- In a single year, the average U.S. home uses 84,000 cubic feet of natural gas.
- Americans use about 62 billion cubic feet of natural gas every day.
- Almost 8,000 U.S. companies produce natural gas.
- When natural gas was first discovered, it was discarded because it was thought to be just a useless by-product of oil.
- Since the 1970s natural gas consumption has grown faster than any other fossil fuel.

Natural Gas

What is natural gas?

Natural gas is a fossil fuel. Natural gas is called a fossil fuel because most scientists believe that it was formed from the remains of ancient sea plants and animals.

Natural gas is trapped in underground rocks much like a sponge traps water in pockets. Natural gas is really a mixture of gases. The main ingredient is *methane*. Methane has no color, odor or taste. As a safety measure, natural gas companies add an odorant, *mercaptan*, to the gas so that leaking gas can be detected (it smells like rotten eggs). People use natural gas mostly for heating. Natural gas should not be confused with gasoline, which is made from petroleum.



Natural gas is nonrenewable.

Natural gas is a *nonrenewable* energy source. That means we cannot make more in a short time.

The History of Natural Gas

The ancient people of Greece, Persia and India discovered natural gas many centuries ago. The people were mystified by the burning springs created when natural gas seeped from cracks in the ground and was ignited by lightning. They sometimes built temples around these eternal flames and worshipped the fire.

In 1816, natural gas was first used in America to fuel street lamps in Baltimore, Maryland. Soon after, in 1821, William Hart dug the United States' first successful natural gas well in Fredonia, New York. It was just 27 feet deep, quite shallow compared to today's wells. Today, natural gas is the country's third largest supplier of energy, after petroleum and coal.

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Producing Natural Gas

Natural gas can be hard to find since it is trapped in porous rocks deep underground. Scientists use many methods to find natural gas deposits. They may look at surface rocks to find clues about underground formations. They may set off small explosions or drop heavy weights on the surface to record the sound waves as they bounce back from the rock layers underground. Natural gas can be found in pockets by itself or in petroleum deposits. Natural gas wells average 5,000 feet deep.

After natural gas comes out of the ground, it is sent to a plant where it is cleaned of impurities and separated into its various parts. Natural gas is mostly methane, but also contains a small amount of other gases such as propane and butane.

Natural gas also can come from several other sources. One source is the gas found in *coal beds*. Until recently, coal bed methane was considered just a safety hazard to miners, but now it is a valuable source of natural gas. Another source of natural gas is the gas produced in landfills. Landfill gas is called a renewable source of natural gas since it comes from rotting garbage.

Today natural gas is produced in 32 states, though just three states – Texas, Louisiana and Oklahoma – produce 59 percent of the total supply. Scientists estimate we have enough natural gas to last for at least 50 years.

Who uses natural gas?

Just about everyone in the United States uses natural gas. *Industry* is the biggest user. Industry burns natural gas for heat to manufacture goods. Natural

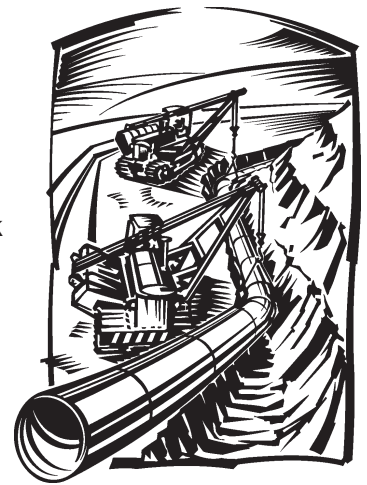
gas is also used as an ingredient in fertilizer, glue, paint, laundry detergent and many other items.

Residences, or homes, are the second biggest users of natural gas. Six out of ten homes use natural gas for heating. Like residences, commercial buildings use natural gas mostly for heating. Commercial users include stores, offices, schools, churches and hospitals.

Natural gas also can be used to make electricity. Just as the chemical energy in coal is used to make electricity, so can the energy in natural gas.

Shipping Natural Gas

Natural gas is usually shipped by pipeline. More than 1 million miles of underground pipelines link natural gas fields to major cities across the United States. Natural gas is sometimes transported thousands of miles in these pipelines to its final destination.



Natural Gas and the Environment

Burning any fossil fuel, including natural gas, releases emissions into the air, as well as carbon dioxide – a greenhouse gas.

Natural gas and propane are the most clean burning fossil fuels. Because it is a cleaner source of energy, scientists are looking for new sources of natural gas and new ways to use it.



This fact sheet is a supplement to the Energy 2 Learn/E2IQ program and are targeted toward fifth- and sixth-grade students. Readers are encouraged to reproduce this material. For more information, about energy resources and conservation, call 1-800-851-8899 or visit www.energy.sc.gov. For information about solid waste issues, please call 1-800-768-7348 or visit www.scdhec.gov/recycle. Energy 2 Learn is a partnership of the S.C. Energy Office and DHEC's Office of Solid Waste Reduction and Recycling. This fact sheet was prepared with the support of the U.S. Department of Energy (DOE), Grant No. DE-FG44-00R410766, State Energy Program, administered by the South Carolina Energy Office. However, any opinions, conclusions, or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the DOE.